

## **Zoning to Protect Resources within the Olympic Coast National Marine Sanctuary**

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*Olympic Coast National Marine Sanctuary*

The outer coast of Washington State is perceived by many to be a marine wilderness area, remote from dense human developments, at the far edge of the continental United States. This perception is reinforced by the dramatic and stark scenery, towering sea mounts, secluded beaches, and waves crashing ashore from across the vast expanse of the world's largest ocean. Visitors travel to the outer coast to view the natural beauty, escape from city life, experience the wilderness, recreate in a natural setting, and enjoy recreational and charter fishing.

Although Washington's outer coast is remote, it is not isolated from impacts of human civilization. Each year, a beach cleanup produces huge volumes of non-biodegradable trash. Visitation levels at coastal beaches are high, and parking lots are often full on summer days. Approximately 40% of the backcountry use of Olympic National Park (ONP) occurs on the outer coast. High use levels have led to implementation of a permitted, limited entry system for the Ozette area in ONP. And as we are too frequently reminded, oil spills are a persistent threat to coastal beaches and resident life.

The Olympic Coast National Marine Sanctuary (OCNMS or the sanctuary) was designated in 1994 as part of the federal National Marine Sanctuary System. The area was recognized for its extraordinary beauty and rich biological diversity, as a marine wilderness area deserving of enhanced protection and preservation. OCNMS covers approximately 3,300 square miles of the outer coast of Washington, stretching north from the Copalis River around Cape Flattery to Koitlah Point, approximately 4 nm into the Strait of Juan de Fuca (Figure 1). OCNMS was established as a multiple-use marine protected area, with mandates for resource protection, research, and education, and with relatively few restrictions on activities. Prohibited activities include overflights below 2000 feet within 1 nm of the coast or National Wildlife Refuge islands, oil exploration and drilling, extraction of ocean minerals, alteration of the seafloor with the exception of traditional fishing practices, and discharge and deposit of materials.

Whereas the existing restrictions do provide a level of protection to meet the sanctuary's mission of ecosystem-wide conservation of ecological and historic resources, activities such as bottom trawling and harvest of intertidal resources continue to occur in ways that might contribute to habitat degradation. Other potential threats to sanctuary resources include a growing regional population and increased visitation levels, intertidal trampling at popular sites, minimal regulation of recreational harvest for some species, and disturbance to wildlife in nearshore areas. Moreover, warning signals come from around the country and throughout the world, telling of fishery collapses and habitat destruction from a variety of coastal activities. Although most current impacts and threats to OCNMS habitats and resources are minimal, the sanctuary is taking a precautionary approach to resource management and heeding the National Marine Sanctuary Program's mandate to improve understanding, management, and conservation of marine resources, and to protect habitat and ecological services.

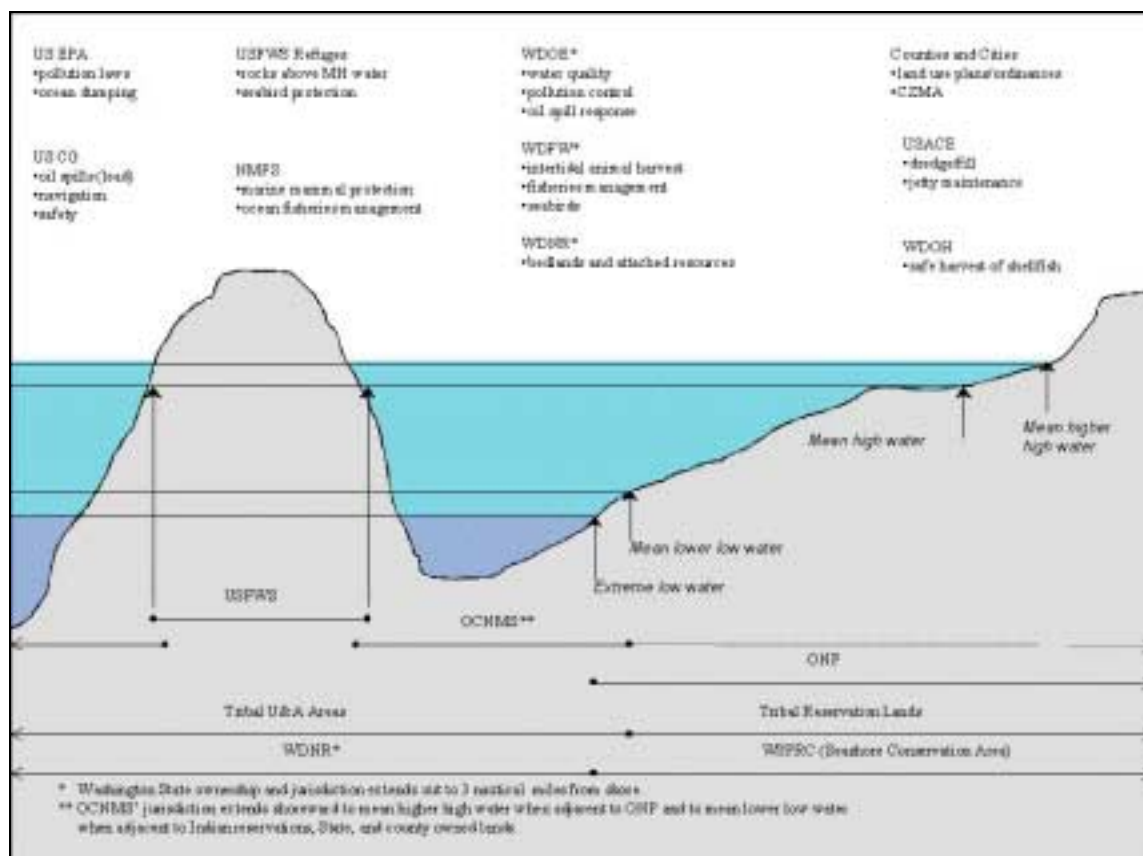
In an effort to provide more comprehensive protection and conservation of marine habitats and biota, the OCNMS superintendent initiated a process to evaluate the need for more restrictive levels of zoning for intertidal areas. This focus was limited for several reasons, the most influential of which was availability of information. Intertidal habitats and biological communities of the sanctuary shoreline are well characterized and documented in a spatially nested GIS database. Comparable data for offshore areas within the sanctuary are sparse and patchy. Moreover, evaluation of zoning of intertidal areas was thought to be a manageable task, feasible with the sanctuary's financial and staff resources. In this effort, OCNMS has a strong partnership with ONP, two federal organizations that have similar mandates and share jurisdiction of intertidal areas on the outer coast.



**Figure 1** Map of Olympic Coast National Marine Sanctuary.

## **Antrim: Zoning to Protect Resources within the Olympic Coast National Marine Sanctuary**

The complicated jurisdiction of the area within OCNMS boundaries influenced the process. The shoreward boundary of OCNMS is at mean higher high water (MHHW) where adjacent to federal lands (ONP, US Fish and Wildlife Refuge lands) and at mean lower low water (MLLW) where adjacent to Tribal reservation and state owned lands (Figure 2). Jurisdiction over lands, subtidal habitats, resources, and activities within the OCNMS boundaries is a complex mix of ownership and responsibilities shared by federal, tribal, state, and local governments (Figure 2). As a result, it was essential that many groups were involved. Each brought to the table a unique perspective.



### Figure 2. Jurisdiction within OCNMS

In the spring of 2000, the sanctuary manager charged the Sanctuary Advisory Council (SAC) with the task of evaluating options for intertidal zoning within OCNMS. The SAC is a 15-member group representing a diverse array of local and regional constituents. They in turn formed a subcommittee, the Marine Conservation Working Group (MCWG), to conduct the evaluation. The MCWG is a consensus based group with representatives from four Native American Tribes with reservation lands on the outer coast (Makah, Quileute, Hoh, and Quinault), federal agencies (ONP, U.S. Fish and Wildlife Service, National Marine Fisheries Service), state agencies (Departments of Fish and Wildlife, Natural Resources, and State Parks and Recreation Commission), and representatives from commercial fishing, conservation, and the scientific community.

At the outset, it was necessary to reinforce with all participants the sovereign rights of Native Americans to harvest and co-manage biological resources within their usual and accustomed areas. Tribal reservation boundaries extend to MLLW where adjacent to the sanctuary and include some intertidal areas under consideration. In fact, the entire OCNMS shoreline lies within the usual and accustomed area of at least one tribe. Thus, the Tribes are important partners in this process, who share with the sanctuary a commitment to the area and a vision that extends to the distant future.

## Puget Sound Research 2001

The first phase of the MCWG's marine zoning process was information gathering. At monthly meetings, the group hosted a series of seminars on coastal oceanography, intertidal monitoring, razor clam management, and marine protected area science. This process of understanding the ecology of the outer coast helped the group identify the three Ws of the process: why, what, and where.

Whereas restoration of damaged habitats or recovery of depleted fish stocks motivates many marine zoning efforts, the MCWG was approaching the issue before notable problems had developed. Consequently, a vision statement, rather than a problem statement, was developed to describe why the need for marine zoning was being evaluated. The vision statement for the MCWG reads as follows.

The Marine Conservation Working Group recommends zoning for intertidal areas of the OCNMS to conserve marine biodiversity, to sustain natural marine populations and habitats, and to foster stewardship in the OCNMS by (1) defining locations for and types of intertidal zoning that establish appropriate protective measures, including a network of fully protected intertidal reserves; (2) researching the effects of intertidal zoning; (3) establishing areas for research and for monitoring long term trends in intertidal zones; and (4) educating the public about marine conservation.

This vision was further defined in a set of goals that help describe what the group was trying to accomplish. The overarching goal is to protect the biological diversity of the intertidal ecosystem. Additional goals were:

1. To protect a variety of representative habitats and associated species.
2. To consider the conservation needs of special groups of organisms, such as species with complex life histories and keystone species, and unique habitats.
3. To preserve and protect the cultural, aesthetic, and historic resources.
4. To preserve the cultural uses and resources of indigenous peoples.
5. To encourage education and interpretive activities at appropriate sites, while minimizing human disturbance.
6. To foster a stewardship ethic so that people can understand and experience the value of habitat management and conservation practices for marine wilderness areas.
7. To provide reference and research sites for analysis of ecosystem changes over time.
8. To provide sustainable populations of harvested species, while minimizing economic disruption to stakeholders.
9. To provide tools for evaluating the effectiveness of management policies and practices.

Throughout this process, the MCWG benefited from a powerful asset, a nearshore habitat database developed for OCNMS by Dr. Carl Schoch. This spatially nested GIS database consists of 8 nearshore cells, 139 partitions representing 21 geomorphological habitat types, and 1880 alongshore segments. The geomorphological partitions had qualitative descriptions of shore features, materials, and processes along with presence/absence observations of 14 major biological populations (mussels, *Fucus*, barnacles, etc.). The higher resolution segments had 16 quantitative physical attributes (substrate size distributions, aspect, wave energy, etc.) and transect samples of abundance for 270 taxa across 15 habitat types. Other data layers were added, as available, that included information on bird colonies and mammal haul-out sites, cultural and historic resources, use areas and levels for back country visitors, trail head locations, and razor clam harvesting. In its consideration of zoning, the primary units used by the MCWG were the 139 geomorphological habitat partitions.

During discussions, recurring confusion was associated with the concept of marine zoning. This resulted, in part, because much of the information presented concerned no-take marine reserves, or areas in which all forms of fishing and other extractive uses are prohibited. Marine zoning is a broader concept that simply means applying unique guidelines to a portion of a larger area. There are a range of unique zoning guidelines to be considered that include no-take reserves, as well as management actions such as seasonal restrictions on activities, permit requirements, prohibitions on selected gear or techniques for harvest, and establishing specific areas for research or routine, large group interpretive programs. The overall goal of zoning is to provide integrated management of a large area and site specific management appropriate to

## ***Antrim: Zoning to Protect Resources within the Olympic Coast National Marine Sanctuary***

different parts of the management area. Zoning is compatible with multiple use and provides more flexibility in management of a large and complex site.

The MCWG also recognized that zoning recommendations must be feasible, and responsible agencies must be able to implement and enforce the recommendations. Thus, the MCWG needed to consider a range of zoning options including, but not limited to, no-take marine reserves, and factor into their deliberations policy and management concerns. The foundation of their recommendations would be built upon scientific information, but final recommendations would be framed within practical limits imposed by policy and management. The MCWG currently is working to define the range of management recommendations or zone classes that will be applied to the shore. Deliberations of the group will continue in 2001, with an interim report due to the SAC in June 2001.

As an initial effort to define where zoning might be implemented, the MCWG convened a Technical Advisory Panel (TAP) consisting of scientists with personal expertise on coastal ecology. The TAP was tasked with providing recommendations for a no-take marine reserve network on the OCNMS shore. The TAP based their site selection on these habitat data, local knowledge of the shoreline, expertise in marine conservation and marine reserves, and knowledge of larval distribution and species life histories. Their process began with consideration of relatively rare habitat types and proceeded towards the selection of larger ecological complexes at intervals of 20-30 km along the coast. These initial deliberations resulted in the selection of primarily rocky shores. The TAP then evaluated sandy and gravel habitats specifically for hardshell clam and razor clam reserve sites. The final recommendations from the TAP produced a network encompassing 24% of the sanctuary shoreline for high priority, 14% for moderate, and 6% for low priority no-take reserve sites. The high priority sites were recommended to the MCWG for consideration as a core no-take reserve network. The remaining moderate and low priority sites were recommended for possible inclusion in the no-take reserve network or a series of other zoning options to be deliberated by the MCWG. The MCWG will use this as a base map on which to overlay legal and jurisdictional conflicts.

A public outreach process also has been implemented to inform the public and to solicit input from stakeholders and resource users. This will take the form of articles in local publications, public meetings, and directed outreach to government and civic groups when recommendations are better defined by the MCWG.

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